

PATENT
Ser. No. 09/196,683
Atty. Docket No. 2013/14

REMARKS

Claims 4-12 and 17-19 are currently pending in the instant application.

Personal Interview of December 23, 2003

Applicants' representative, Laleh Jalali, would like to thank the Examiner for the courtesies extended during the personal interview of December 23, 2003 ("the Interview"). During the Interview, the Examiner noted that he would reconsider the rejections made against the claims in detail in light of the arguments advanced during the Interview. The arguments presented during the Interview are set forth below in more elaborated form.

Rejection under 35 USC 103(a)

JP 9-199145 (JP 145) in view of JP 7-249417 (JP 417) in view of Chow et al. (U.S. Patent 5,284,718) in view of Pereira et al. (U.S. Patent 6,044,842)

Claims 8-12, 18 and 19 have been rejected under 35 USC 103(a) as being unpatentable over JP 9-199145 (JP 145) in view of JP 7-249417 (JP 417) in view of Chow et al. (U.S. Patent 5,284,718) in view of Pereira et al. (U.S. Patent 6,044,842). Reconsideration is respectfully requested.

The invention as set forth in independent claims 8, 18 and 19 relate to a method of manufacturing a fuel cell, or to a fuel cell, where a carbon separator is bonded directly to a polymer electrolyte film with an adhesive, where the adhesive either has a modulus of elasticity not greater than 10 MPa after cure, or a durometer A hardness of not greater than 90 after cure.

Examiner has not made a *prima facie* case for his proposition that it would have been obvious to modify JP 145 to arrive at the instant invention as claimed in claims 8, 18 and 19.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the references must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

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The initial burden is on the examiner to provide some suggestion of the desirability of doing what the inventor has done. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985).

The Examiner has not made a prima facie case for the proposition that it would be obvious to modify JP 145's adhesive into a sealant such as the one taught in Chow et al., and to further change the elasticity/durometer hardness of that sealant based on Pereira et al.'s disclosure of a correlation of durometer hardness and elastic modulus of rubber.

First, Chow et al.'s disclosure of the use of a sealant between the MEA and the adjacent electrically conductive plate has nothing to do with the use of an adhesive between an electrolyte film and its adjacent carbon separator. Thus, there would be no motivation to combine JP 145 and Chow et al. in the first instance since the sealant would disadvantageously eliminate the adhesive in JP 145. In addition, even assuming for argument's sake that the sealant in Chow et al. did have some adhesive properties, even in such a case, Chow et al. in any event teach away from the use of even a sealant: not only do Chow et al. mention a sealant's lack of resiliency, they also state that extrudable sealants tend to undergo chemical degradation, and that their use disadvantageously requires the machining of grooves to carry the sealant in the electrode shield material. Thus, a person having ordinary skill having JP 145 and Chow et al. before him would be taught away from using Chow's sealant in JP 145 in the first instance. It is therefore not seen why a person of ordinary skill would have been motivated to combine the two references as suggested by the Examiner in the first instance.

The Examiner additionally uses Pereira et al. for the proposition that it would be obvious to change the modulus of elasticity and/or durometer hardness of the sealant of Chow et al. used in JP 145 to arrive at the instant invention. First, Pereira et al. is non-analogous art. There is nothing in Pereira et al. that would have motivated a person skilled in the art to consider the same in the fuel cell art. Moreover, any disclosure in Pereira et al. relating to modulus of elasticity and/or durometer hardness relates to rubber compounds, and further to rubber compounds under conditions of relatively low strain. There is nothing in Pereira et al. that would have motivated a person of ordinary skill to combine its teachings

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with respect to rubber to changing the modulus of elasticity and/or durometer hardness of the sealant in Chow et al. In addition, importantly, Pereira et al. do not even pertain to the modulus of elasticity and/or durometer hardness ranges of the adhesive of the present invention. Thus, even assuming arguendo that they could be combined with JP 145 and Chow et al., such a combination would still be far from resulting in the instant invention.

In view of the above, it is submitted that independent claims 8, 18 and 19 are patentable over the cited combination of references. Dependent claims 9-12 are likewise patentable over the cited combination of references by virtue of being dependent from claim 8, and further for the particular additional features that they recite.

Accordingly, the Examiner is respectfully requested to reconsider and withdraw his rejection of the claims under Section 103(a).

JP 9-199145 (JP 145) in view of JP 7-249417 (JP 417) in view of Chow et al. (U.S. Patent 5,284,718) in view of Pereira et al. (U.S. Patent 6,044,842) further in view of Palmer (U.S. Patent 4,804,451)

Claims 1, 4-7 and 17 have been rejected under Section 103(a) as being unpatentable over JP 9-199145 (JP 145) in view of JP 7-249417 (JP 417) in view of Chow et al. (U.S. Patent 5,284,718) in view of Pereira et al. (U.S. Patent 6,044,842) further in view of Palmer. Reconsideration is respectfully requested.

Independent claims 1 and 17 relate to a method of manufacturing a fuel cell, or to a fuel cell, where a carbon separator is bonded directly to a polymer electrolyte film with an adhesive, where the adhesive either has a modulus of elasticity not greater than 10 MPa after cure.

The combination of JP 145, Chow et al. and Pereira et al. has been discussed with respect to independent claims 8, 18 and 19 above. The combination of references cited against independent claims 1 and 17 is inapplicable to independent claims 1 and 17 for the same reasons as advanced above with respect to independent claims 8, 18 and 19. In addition, Palmer does nothing to overcome the deficiencies of JP 145, Chow et al. and Pereira et al.

In view of the above, it is submitted that independent claims 8, 18 and 19 are patentable over the cited combination of references. Dependent claims 9-12 are likewise patentable over the cited combination of references by virtue of being dependent from claim 8, and further for the particular additional features that they recite.

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Accordingly, the Examiner is respectfully requested to reconsider and withdraw his rejection of the claims under Section 103(a).

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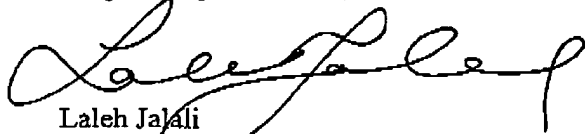
CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the presently pending claims are in condition for allowance. The Applicant therefore earnestly solicits issuance of a Notice of Allowance for claims 1, 4-12 and 17-19.

The Examiner is invited to contact the undersigned at (202) 220-4296 to discuss any matter concerning this application.

No additional fees are believed to be required in connection with this submission. Nonetheless, the Applicants authorize payment of any additional fees under 37 C.F.R. § 1.16 or § 1.17 or credit of any overpayment to Deposit Account No. 11-0600.

Respectfully submitted,



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